

# EFFECTIVENESS AND COMPLICATIONS OF MULTI LOAD (MLU 375) INTRAUTERINE DEVICE AMONG FEMALES ATTENDING FAMILY PLANNING CLINIC

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## ABSTRACT

**OBJECTIVE:** To see the effectiveness and complications of intrauterine device (IUCD); multi load (MLU 375) among females attending a family planning clinic.

**DESIGN:** A prospective study.

**SETTING:** A family planning clinic at Hyderabad, Sindh from June 2003 to May 2004.

**SUBJECTS AND METHODS:** Out of 145 women, a total of 75 (51.72%) were registered after screening for the insertion of IUCD Multi load (MLU 375). Effectiveness and complications of IUCD (MLU 375) were recorded through a proforma. IUCD insertion was done under aseptic technique. Women were advised for follow up after 1, 6 and 12 months of insertion. They were provided a booklet for keeping their menstrual cycle record.

**RESULTS:** Most of the women were educated and belonged to urban area. Mean age of women was 24.4 years. Majority of women 23 (30.66%) had 5 children. After one month follow up, 32 (42.66%) women complained of menorrhagia, 21 (28%) complained of lower abdominal pain, 17 (22.33%) increased vaginal discharge while 5 (6.66%) did not complain of any symptom. After six month follow up, 69 (92%) women were symptom free and satisfied with this method, 5 (6.6%) developed pelvic infection and only 1 (1.34%) had displaced IUCD, which was removed under general anesthesia. After 12 month follow up, 74 (98.66%) women continued this method and only 1 (1.34%) woman was given alternative method of contraception. Pregnancy rate was zero.

**CONCLUSION:** IUCD (MLU 375) is a highly effective, safe and reversible method of contraception with zero pregnancy rate and also has minimal complications which decrease simply by good counseling and regular follow up.

**KEY WORDS:** *Family Planning. Contraception. Pregnancy. Complication. Infection.*

## INTRODUCTION

Many women of reproductive age are at risk for undesired pregnancy. Therefore, they seek some form of family planning procedures. As a result of different contraceptive methods women can be saved from high-risk pregnancies, and thus a fall in maternal mortality can be achieved. Measures used to prevent conception are given the abbreviated name of contraception. Different methods of contraception in females include; conventional methods (safe period and chemical spermicides), clinical methods (IUCD, diaphragm, hormonal contraception) and surgical method (tubal ligation).

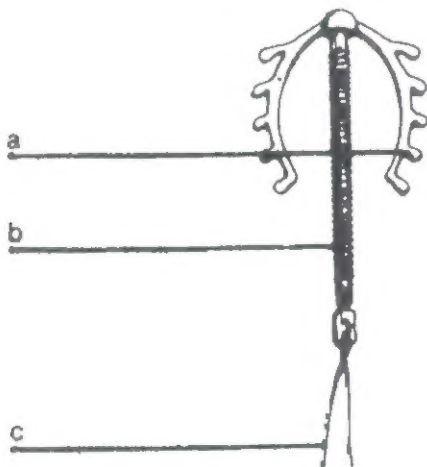
Family Planning not only helps women to improve quality of life, but also saves the children's life and thus, help the nation in improving the economic situation. If couples have fewer children, in future the world's current population of 5.9 billions will not be doubled in less than 50 years<sup>1</sup>. For more than 2000 years, it has been known that pregnancy can be

avoided by inserting objects such as a ring, stone or wire in the uterus. Extensive research work was carried out and after about 40 years Jack Lippes made the first model of his double S shaped IUCD<sup>2</sup>. After that CU-T and Multi load were introduced. Multi load is the latest type of IUCDs. It consists of small plastic rod wound with Copper wire along with two flexible plastic arms and Nylon thread (**Figure 1**). It has larger surface area of copper, which prevents migration of sperms at the normal site of fertilization in the fallopian tubes<sup>3,4</sup>. IUCD (MLU 375) is inserted during menstruation. It can be inserted postpartum within 48 hours or after 6 weeks of normal vaginal delivery and 12 weeks after caesarean section<sup>5</sup>. It does not affect lactation and thus, is safe for breast fed babies. IUCD insertion can also be done after induced or spontaneous abortion provided there is no infection<sup>6</sup>. However, it is not appropriate for women who have history of pelvic inflammatory diseases and who are at risk of sexually transmitted diseases. Women who are immunosuppressed are also not



suitable candidates for IUCD insertion. Uterine malformation, cervical stenosis, undiagnosed cervical or uterine disorders are absolute contraindications for insertion. IUCD (MLU 375) insertion needs a trained person, good sterilization, gentle and slow technique. It acts as a contraceptive, right from the time of insertion. Pain and abdominal cramps during the insertion as well as light bleeding and mild leg cramps for few days after insertion are experienced by majority of the females. Dysmenorrhea and menorrhagia during first and second menstrual cycles are main complaints which decrease after several cycles. Good counseling and reassurance during follow up, analgesics like Ibuprofen or Diclofenac sodium can minimize these symptoms. Contamination during IUCD insertion can produce pelvic infection, which can be prevented by proper sterilization and antibiotics. Women should be encouraged to use condom if partner is having infection. Proper follow up and maintenance of hygienic condition also prevent infection. Excessive bleeding not tolerated by women, unusual vaginal discharge and severe lower abdominal pain need immediate removal of IUCD (MLU 375). In this paper, we present effectiveness and complications of multi load (MLU 375) IUCD among females attending a family planning clinic in our local setup.

**FIGURE I:**  
**IUCD (MLU 375)**



- a. Flexible plastic arms
- b. Small plastic rod with copper wire
- c. Nylon thread

## MATERIAL AND METHODS

This study was carried out at a family planning clinic situated in Hyderabad, Sindh. This clinic works under a non governmental organization (NGO) with

overseas affiliation. Main project of this NGO is introduction of modern contraceptive methods in private sector. Duration of study was one year from June 2003 to May 2004. Out of 145 women who came for different contraceptive methods, 75 women were registered for IUCD (MLU 375) insertion. After taking history, general physical and gynecological examinations (P/V and P/S) were carried out to exclude any abnormal vaginal discharge and to see the condition of cervix. Baseline investigations such as Blood CP and Urine DR were carried out to exclude anaemia and urinary tract infection. Pelvic ultrasound was done to exclude any uterine abnormality. In majority of women IUCD (MLU 375) insertion was done during menstrual period. In few women, after 6 weeks of normal vaginal delivery and after one week of incomplete abortion, drainage and curettage (D and C) was performed and antibiotics were given prior to insertion. In all women, uterine sounding was done prior to insertion and technique was carried out with aseptic measures. All women were advised to come for follow up after one, six and twelve months of insertion. They were advised to keep the menstrual cycle record on a booklet provided by investigators. Women were also advised to come earlier if they developed severe lower abdominal pain, increased vaginal discharge or menstrual bleeding.

## RESULTS

Out of 145 women who attended family planning clinic during study period, 75 accepted IUCD (**Figure II**). Majority of women was educated and belonged to urban area. Age range was 20-35 years with mean 24.4 years (**Table I**). Majority of women 23 (30.66%) was having 5 children (**Table II**). In 65 (86.66%) women, IUCD insertion was done during menstruation, in 7 (9.34%) after 6 weeks of normal vaginal delivery and in 3 (4%) after one week of incomplete abortion (after D and C). Women were advised to come for follow up after one, six and twelve months of insertion. After one month follow up menorrhagia was the main symptom complained by 32 (42.66%) women. Other symptoms were lower abdominal pain experienced by 21 (28 %) women, increased vaginal discharge by 17 (22.33%) women while 5 (6.6%) women did not complain any symptom (**Table III**). After six month follow up, 69 (92%) women had no complain and were satisfied with this method. Five (6.66%) women developed pelvic infection which was treated by giving antibiotics. One (1.34%) woman had displaced IUCD in uterine wall which was removed under general anesthesia. After one year of follow up, 74 (99.7%) continued this method of contraception and one

(1.33%) woman was given alternate method of contraception.

**TABLE I:  
AGE DISTRIBUTION OF SUBJECTS**

Age (in years)	Number of women	Percentage
20-25	35	46.66
26-30	25	33.34
31-35	15	20.00
<b>Total</b>	<b>75</b>	<b>100</b>

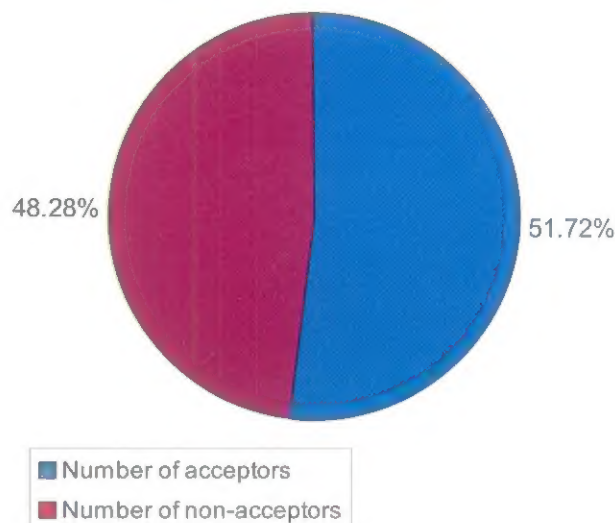
**TABLE II:  
NUMBER OF SIBLINGS OF WOMEN ATTENDING  
FAMILY PLANNING CLINIC**

Number of living children	Number of women	Percentage
5	23	30.66
3	20	26.66
4	18	24.00
6	8	10.67
2	5	6.67
1	1	1.34
<b>Total</b>	<b>75</b>	<b>100</b>

**TABLE III:  
SYMPTOMS AFTER ONE, SIX AND TWELVE  
MONTH FOLLOW UPS**

Symptom	Number of women	Percentage
<b>SYMPTOMS AFTER ONE MONTH FOLLOW UP</b>		
Menorrhagia	32	42.66
Lower abdominal pain	21	28.00
Increased vaginal discharge	17	22.68
Symptom free	5	6.66
<b>SYMPTOMS AFTER 6 MONTH FOLLOW UP</b>		
Symptom free	69	92
Pelvic infection	5	6.66
Displaced IUCD	1	1.34
<b>SYMPTOMS AFTER 12 MONTH FOLLOW UP</b>		
Symptom free and continued method	74	98.66
Alternate method (Injectable)	1	1.34

**FIGURE II:  
NUMBER OF WOMEN WHO ACCEPTED IUCD  
DURING STUDY PERIOD**



## DISCUSSION

Pakistan is the 7<sup>th</sup> most populous country in the world with highest population growth rate (2.1% per year) among developing countries. In 2001, population was 142.5 million which was 2.3% of the world population. In 2004, population growth rate was 1.82% and total fertility rate was 3.6%. To achieve quality of life, the fertility rate should be declined to 2.8% and contraceptive prevalence rate should be increased from 32% to 53% by the year 2012<sup>7</sup>. Worldwide, approximately 13% of all women of reproductive age use the IUCD. In Pakistan, 18% of married women use IUCD, which is one of the latest and 2<sup>nd</sup> most popular method of contraception<sup>5</sup>. Lippes loop was the oldest IUCD with failure rate 2% to 6% while newer IUCDs (TU 380, MLU 375) have failure rate 1% or less due to largest surface area of copper. Latest method is medicated IUCD which is levonorgestron hormone releasing device and has pregnancy rate equal to that of copper device<sup>8</sup>. In our one year study, 145 women opted for contraception. Of these, 75 (51.72%) women of reproductive age group (20-35 years) accepted IUCD. This figure is nearly consistent with a study carried out at family planning clinic of university of Nigeria, where acceptance rate was 60%<sup>9</sup>. Pregnancy rate in our study was zero that might be due to our proper client selection and follow up. In contrast, a study from a teaching hospital of Nigeria has reported accidental pregnancy rate 1.3%<sup>10</sup>. Meanwhile, according to Frederick R. Jelovesek, pregnancy rate by IUCD remains 0.16% in one year<sup>11</sup>.



In this study, after one month of follow up, menorrhagia was the main complaint experienced by 32 (42.6%) women. This might be due to increased activity of lysosomal enzymes particularly Acid phosphates, An-acetyl B-P glucoseaminidase and Alpha L-Fucosidase in IUCD exposed endometrium<sup>12</sup>. Meanwhile a study has reported side effects like excessive bleeding, irregular menstruation or abdominal pain 11.7%<sup>13</sup>. Second complaint was the abdominal pain experienced by 21(28%) our women while increased vaginal discharge was complained by 17 (22.66%) women. This might be due to inflammatory reaction, which subsides by itself after several cycles and none of our cases needed removal due to these complaints. After 6 months of follow up, 69 (92%) women were symptom free and did not require any treatment and this might be due to the adaptation of the body to this device. Five (6.66%) women developed cervical infection, which might be due to poor hygienic condition during menstruation or her partner was having infection and that was treated by giving antibiotics to both partners. Her male partner was advised to use condom. Meanwhile World Health Organization studies have demonstrated that the rate of pelvic inflammatory disease immediately after insertion remains 9.7 per thousand women per year<sup>14</sup>. Displaced IUCD though is a rare complaint but in our study, one (1.34%) woman developed this problem as IUCD migrated into uterine wall. Such displacements had also been reported by different authors<sup>15,16</sup>. After one year of follow up, 74 (99.7%) women were satisfied with this method of contraception and only one (1.33%) woman was given alternate method of contraception.

## CONCLUSION

IUCD (MLU 375) is highly effective, safe and reversible method of contraception with few complications, which are minimized by aseptic technique, good counseling and regular follow up by women. It is highly accepted by women who do not want sterilization or any other contraceptive method, and is thus contributing to reduce the economic burden of the nation. Therefore, acceptability of IUCD (MLU 375) should be encouraged by health education, sympathetic counseling, careful client selection and regular follow up with quick access to medical care.

## REFERENCES

1. Rinechart W, Blackburn R et al. Family planning helps every one. The essentials of contraception technology. John Hopkins population information programme. 2<sup>nd</sup> ed. 1997; 1-2.
2. Thomson RJ, Ray DL. Dr. Lippes and his loop: four decades in perspective. *J Reprod Med* 1999; 44:833-6.
3. World Health Organization. Mechanism of action, safety and efficacy of intrauterine device: report of a scientific committee. WHO technical report series 753, Geneva. 1987:16.
4. Wilcox AJ, Weinberg CR, Armstrong EG et al. Urinary human chorionic gonadotropin among intrauterine device users: detection with a highly specific and sensitive assay. *Fertil Steril* 1987;47:265-269.
5. Finger WR. Copper T IUD: safe, effective, reversible. *Network* 2000; 20(1):4-11.
6. Stanwood NL, Grimes DA, Schulz KF. Insertion of an intrauterine contraceptive device after induced or spontaneous abortion: a review of the evidence. *Br J Obstet Gynaecol* 2001; 108(11): 1168-1173.
7. <http://www.wssd.gov.pk/ch.05.doc>.
8. Anonymous. Levonorgestrel intrauterine device: new preparation, an alternative. *Prescrire Int* 1999 ; 8(44):175-7.
9. Ozumba BC, Ibekwe PC. Contraceptive use at the family planning clinic of The University of Nigeria teaching hospital, Enuge, Nigeria. *Public Health* 2001;115(1):51-3.
10. Olatinwo AW, Anate M, Balogun et al. Intrauterine contraceptive device IUCD: Socio demographic characteristics of acceptors acceptability and effectiveness in a teaching hospital in Nigeria. *Niger J Med* 2001; 10(1):14-7.
11. Jelovsek FR. IUCD: a forgotten contraceptive method. Available at [www.wdxcyber.com](http://www.wdxcyber.com)
12. Wang IY, Fraser IS, Barsamian SP et al. Endometrial lysosomal enzyme activity in ovulatory dysfunctional uterine bleeding, IUCD users and post partum women. *Mol Hum Rep.* 2000; 6(3): 258-263.
13. Wu T, Buck G. Side effects and discontinuation rates of intra uterine contraceptive device use in Jilam Province of China. *Asia P J Public Health* 1998; 10(1): 33-8.
14. Farley TM, Rosenberg MJ, Row PJ et al. Intrauterine device and pelvic inflammatory disease: an international perspective. *Lancet* 1992; 339:785-788.

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2. Thomson RJ, Ray DL. Dr. Lippes and his loop: four decades in perspective. *J Reprod Med* 1999; 44:833-6.
3. World Health Organization. Mechanism of action, safety and efficacy of intrauterine device: report of a scientific committee. WHO technical report series 753, Geneva. 1987:16.
4. Wilcox AJ, Weinberg CR, Armstrong EG et al. Urinary human chorionic gonadotropin among intrauterine device users: detection with a highly specific and sensitive assay. *Fertil Steril* 1987;47:265-269.
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7. <http://www.wssd.gov.pk/ch.05.doc>.
8. Anonymous. Levonorgestrel intrauterine device: new preparation, an alternative. *Prescrire Int* 1999; 8(44):175-7.
9. Ozumba BC, Ibekwe PC. Contraceptive use at the family planning clinic of The University of Nigeria teaching hospital, Enuge, Nigeria. *Public Health* 2001;115(1):51-3.
10. Olatinwo AW, Anate M, Balogun et al. Intrauterine contraceptive device IUCD: Socio demographic characteristics of acceptors acceptability and effectiveness in a teaching hospital in Nigeria. *Niger J Med* 2001; 10(1):14-7.
11. Jelovsek FR. IUCD: a forgotten contraceptive method. Available at [www.wdxcyber.com](http://www.wdxcyber.com)
12. Wang IY, Fraser IS, Barsamian SP et al. Endometrial lysosomal enzyme activity in ovulatory dysfunctional uterine bleeding, IUCD users and post partum women. *Mol Hum Rep.* 2000; 6(3): 258-263.
13. Wu T, Buck G. Side effects and discontinuation rates of intra uterine contraceptive device use in Jilam Province of China. *Asia P J Public Health* 1998; 10(1): 33-8.
14. Farley TM, Rosenberg MJ, Row PJ et al. Intrauterine device and pelvic inflammatory disease: an international perspective. *Lancet* 1992; 339:785-788.



15. Chen CP, Hsu TC, Wang W. Ileal penetration by a multiload CU 376 contraceptive device: a case report with review of literature. *Contraception* 1998; 58 (3):295-304.
16. Kassab B, Audra P. The migrating interuterine device: a case report and review of the literature. *Contracept Fertil Sex* 1999; 27(10): 696-700.



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